

Claims

[c1] 1. An imaging device, comprising:

- a color filter formed by a plurality of color elements each of which has any one of N (N: integer more than one) of colors;
- an imager having a plurality of pixels; and
- a provider for providing a drive pulse to said imager, wherein the plurality of color elements are divided into a plurality of color blocks each of which has a plurality of horizontal color element rows and N of vertical color element columns,
- the plurality of pixels are divided into a plurality of pixel blocks each of which has a plurality of horizontal pixel rows and N vertical pixel columns,
- the N vertical color element columns respectively include N color elements which are different in colors with each other,
- the plurality of horizontal pixel rows respectively correspond to the plurality of horizontal color element rows,
- the N vertical pixel columns respectively correspond to the N vertical color element columns, and
- the drive pulse includes a reading pulse for reading pixel signals from the N vertical pixel columns in a thinning

out manner, a vertical transfer pulse for transferring the pixel signals read by the reading pulse in a vertical direction, and a horizontal transfer pulse for transferring the pixel signals transferred by the vertical transfer pulse in a horizontal direction every time a vertical transfer corresponding to the plurality of horizontal pixel rows is performed, and the color elements corresponding to pixels selected for reading of the pixel signals from the N vertical pixel columns have different colors for each vertical pixel column.

- [c2] 2. An imaging device according to claim 1, wherein one pixel of pixel signal is read out from one vertical pixel column forming one pixel block.
- [c3] 3. An imaging device according to claim 1, wherein each of the N vertical color element columns includes two or more of color elements which have the same color, and a plurality of pixels of pixel signals are read out from each of the N vertical pixel columns.
- [c4] 4. An imaging device according to claim 1, wherein the pixel signals are read out from each of the plurality of pixel blocks such that intervals of the horizontal pixel rows each of which includes pixels for reading becomes equal.

- [c5] 5. An imaging device according to claim 1, wherein the N colors are green, magenta, yellow and cyan, color elements of the green and the magenta are alternately arranged on one of odd number of horizontal color element rows and even number of horizontal color element rows, and color elements of the yellow and cyan are alternately arranged on another of the odd number of horizontal color element rows and the even number of horizontal color element rows.
- [c6] 6. A digital camera comprising an imaging device according to any one of claims 1 to 5.